Math 220, Section 201 Homework #3 due Friday, February 1, 2002 at the beginning of class

Warm-Up Questions-do not hand in

- I. Lay, p. 92, #10.12
- II. Lay, p. 102, #11.4
- III. Lay, p. 112, #12.3(a)-(j), (m), (n)
- IV. Lay, p. 113, #12.5
- V. Prove Theorem 11.9(d).

February 1's quiz will be one of these five warm-up questions.

Homework Questions—hand these in

- I. Lay, p. 92, #10.14
- II. Lay, p. 102, #11.6
- III. Consider the following statement, which is very similar to Theorem 11.7:

Let x and y be real numbers. If $x < y + \varepsilon$ for every $\varepsilon > 0$, then x < y. For each of the following,

- the statement itself
- the contrapositive of the statement
- the converse of the statement,

decide whether it is true or false. If true, prove it; if false, prove its negation.

IV. Lay, p. 113, #12.6 and #12.8. (Hint: to prove that something is unique, let s and t both satisfy the definition or property that the something is supposed to satisfy, and then prove that s = t.)